1- FEB 1955

MEMORANDUM FOR: Deputy Director/Intelligence

SUBJECT: ORR and EIC Activities in the Field of Soviet Guided Missile Intelligence

1. During the past year, ORR has devoted a significant portion of its total research capability to the economic aspects of guided missile production as it may relate to Soviet efforts in this field. This activity has been reflected in major contributions to an NIE, in extensive research on missile components, in the development of pinpointed collection requirements, and in extensive training and familiarization assignments. Today, ORR is an important, and possibly the most competent, intelligence organization working on the economic phases of guided missile intelligence. Present plans are to expand this effort in the Fiscal Year 1956 Research Program.

2. At the instigation of ORR, an EIC Working Group has recently been established for coordinating research efforts in the field of guided missile economic intelligence. The membership of this Working Group has been drawn largely from the intelligence components of the Services which normally follow production, rather than from the scientific and technical staffs. Participants have been selected on the basis of previous training and direct interest in guided missiles.

3. Should the IAC establish an over-all guided missiles intelligence committee, we believe that responsibility for producing economic intelligence on Soviet guided missile systems, including presentation of production estimates, should be delegated to a special subcommittee, preferably the recently established EIC Working Group. This subcommittee, whether or not it would remain attached to the EIC structure, would be in a position to provide the economic intelligence pertaining to the problem of the Soviet

guided missiles program. This approach would be a logical way of bringing to bear the considerable effort expended within the economic intelligence community on the Soviet guided missile industry and would provide a mechanism whereby the entire resources of ORR could effectively be brought to bear on this important question.

4. ORR has developed a capability in the field of Soviet guided missile intelligence. Today this organization represents a unique reservoir of talent for analyzing the economic aspects of the problem. It has completed most of the substantive guided missile economic research conducted to date within the intelligence community. The experience of ORR in this field has led to a conviction that, if the intelligence community is going to develop meaningful estimates of Soviet guided missile production, this must be done through the examination of all sectors of the Soviet economy. This involves a broad understanding of sector capabilities and limitations and careful investigation on an all-source basis. Answers on Soviet production capabilities and estimates must be derived from the extensive research being carried out on a large number of industries that are intimately related to guided missile production. Unlike the atomic energy industry, which is relatively self-contained, the guided missile "industry" is in fact a host of individual industries which must be studied in their entirety. For example, an attempt to separate out from the electronics industry specific factors which affect guided missiles would require the same depth of research on the entire industry which is presently being put forth in ORR. The same considerations apply to the other 16 principal components of the guided missile system.

5. Reasonable estimates of guided missile production capabilities, in the opinion of ORR, can only be made against a background of knowledge covering the capabilities of all sectors of the economy. The primary role of ORR in estimating these production capabilities was recognized in the preparation of NIE 11-6-54 in two ways: first, ORR prepared the major substantive contributions to the estimate; secondly, ORR provided the chairman of the two ad hoc IAC working groups set up to assist in preparing the economic portions of the estimate. As part of the research task, ORR examined Soviet production capabilities, as well as evidence of actual production, in the following component fields: electronic and control mechanisms, propulsion fuels and oxidizers, high alloy metals, antifriction bearings, precision mechanisms, airframes, explosive war-heads, motors and engines, testing equipment, and launching apparatus. Over 4,000 research

hours were expended, involving the participation of 16 of the 23 branches of the Economic Research Area. It is clear that the ramifications of guided missile intelligence cut across virtually all sectors of industry.

6. In addition to the survey of component production capabilities, ORR prepared a comprehensive analysis of the cost of the missile program estimated (by the Services) to be required. The detailed item by item costing of the entire bill of goods for complete missile systems, and its feasibility testing, could only be performed by ORR because this is the sole organization in the intelligence community with such a capability.

7. The program analysis approach, although only a first effort, was considered so promising by ONE that it is being applied to the current NIE on Soviet Air Defense. In the long-range planning studies of Air Force (RAND), and Army (ORO), such program analysis has proven so useful that it is incorporated into all weapon systems analysis and is regularly computed by the economic divisions in these research organizations. ORR is presently engaged in extensive research in support of this NIE and a substantial portion of the effort is again concerned with guided missile systems analysis. Thirteen research branches are involved and several thousand additional hours are going into improving guided missile intelligence. As was the case in the 1954 NIE, ORR is providing the major substantive economic contribution as well as the chairman of the EIC Working Group set up to coordinate the estimate.

8. As a result of activities over the past year, it became apparent that far more research in depth on a wide variety of pertinent economic subjects was needed if meaningful estimates of Soviet guided missile production, and capacities to produce, were to be made. This conclusion was reinforced by the very small amount of direct evidence of production that an intensive all-source survey produced. Concurrently with the research support undertaken for NIE 12-5-55, a series of longer range basic research projects is being undertaken in ORR. These include Production of Non-Electronic Precision Instruments in the Soviet Bloc, Survey of Guided Missile Electronics in the Soviet Bloc, and Selected Critical Non-Ferrous Metals in the Soviet Bloc. Additional research projects in the fields of chemicals, alloy steels, defense expenditures, aircraft, fuels, and military economics, while not directed solely at the guided missile problem, will broaden our competence and improve the research base needed.

9. In the field of training, ORR has stressed the development of competence in the guided missiles field. Two analysts attended the Army's guided missile school, and one the Navy (BuOrd) school. ORR participated in the London Guided Missiles Conference. Thirteen analysts have made extended tours of most important U.S. guided missile production facilities, test ranges, component plants, and research and development facilities.

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Over 50 analysts attended showings of a series of 10 training films on U.S. missiles over a period of three months. Extensive files of technical literature have been built up. This effort represents a significant investment in time and money to build up competence, and should pay off for many years to come.

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OTTO E. GUTHE
Assistant Director
Research and Reports

OAD/RR/OEGuthe:amm
(1 February 1955)
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